

Listing of the Claims:

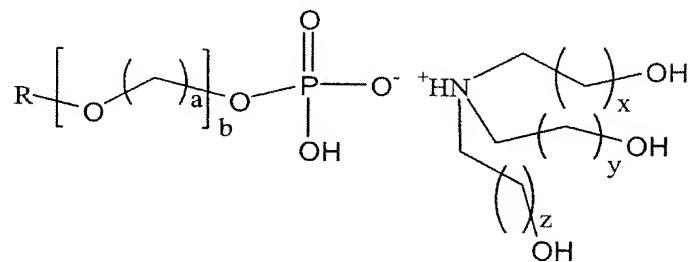
The following listing of claims will replace any/all prior versions, and listings, of claims in the application:

1. (Original) A cleaning solution for photoresist patterns comprising:

H₂O as a solvent; and

a compound represented by following Formula 1 as a surfactant:

Formula 1



wherein

R is C₂-C₂₀ alkyl or C₆-C₂₅ alkyl aryl;

x, y and z individually are an integer ranging from 0 to 10;

a is 2 or 3; and

b is an integer ranging from 2 to 50.

2. (Original) The cleaning solution according to claim 1, wherein the b is an integer ranging from 6 to 11.

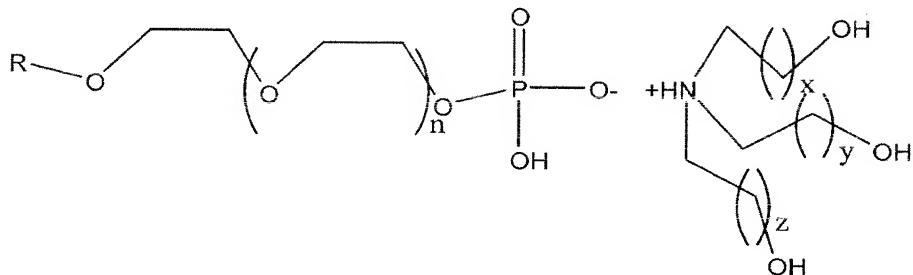
3. (Original) The cleaning solution according to claim 1, further comprising an alcohol.

4. (Original) The cleaning solution according to claim 1, wherein the compound of Formula 1 is present in an amount ranging from 0.001 to 2 wt% based on the total weight of said solution.

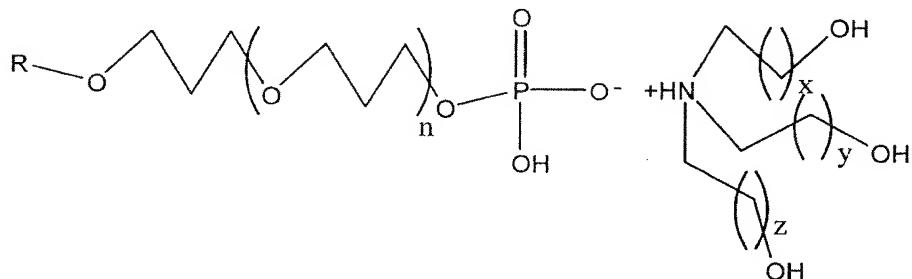
5. (Original) The cleaning solution according to claim 3 wherein the alcohol is present in an amount ranging from 0 to 20 wt% based on the total weight of said solution.

6. (Original) The cleaning solution according to claim 1, wherein the compound of Formula 1 is represented by Formula 2 or Formula 3:

Formula 2



Formula 3



wherein

R is $\text{C}_2\text{-C}_{20}$ alkyl or $\text{C}_6\text{-C}_{25}$ alkyl aryl;

x , y and z individually are an integer ranging from 0 to 10; and

n is an integer ranging from 1 to 49.

7. (Original) The cleaning solution according to claim 6, wherein the compound of Formula 2 is present in an amount ranging from 0.001 to 2 wt% based on the total weight of said solution, and the alcohol is present in an amount ranging from 0 to 20 wt% based on the total weight of said solution.

8. (Original) The cleaning solution according to claim 6, wherein the compound of Formula 3 is present in an amount ranging from 0.001 to 2 wt% based on the total weight of said solution, and the alcohol is present in an amount ranging from 0 to 10 wt% based on the total weight of said solution.

9. (Original) The cleaning solution according to claim 7, wherein the compound of Formula 2 is present in an amount ranging from 0.01 to 1 wt% based on the total weight of said solution, and the alcohol is present in an amount ranging from 0.01 to 10 wt% based on the total weight of said solution.

10. (Original) The cleaning solution according to claim 8, wherein the compound of Formula 3 is present in an amount ranging from 0.001 to 1 wt% based on the total weight of said solution, and the alcohol is present in an amount ranging from 0.001 to 5 wt% based on the total weight of said solution.

11. (Original) The cleaning solution according to claim 6, wherein R is selected from the group consisting of octyl, octyl phenyl, nonyl, nonyl phenyl, decyl, decyl phenyl, undecyl, undecyl phenyl, dodecyl and dodecyl phenyl, and n is an integer ranging from 5 to 10.

12. (Original) The cleaning solution according to claim 3, wherein the alcohol is selected from the group consisting of C₁-C₁₀ alkyl alcohol, C₁-C₁₀ alkoxyalkyl alcohol, and mixtures thereof.

13. (Original) The cleaning solution according to claim 12, wherein the C₁-C₁₀ alkyl alcohol is selected from the group consisting of methanol, ethanol, propanol, isopropanol, n-butanol, sec-butanol, t-butanol, 1-pentanol, 2-pentanol, 3-pentanol, 2,2-dimethyl-1-propanol and mixtures thereof.

14. (Original) The cleaning solution according to claim 12, wherein the C₁-C₁₀ alkoxyalkyl alcohol is selected from the group consisting of 2-methoxyethanol, 2-(2-methoxyethoxy)ethanol, 1-methoxy-2-propanol, 3-methoxy-1,2-propandiol and mixtures thereof.

15. (Original) The cleaning solution according to claim 1, wherein the solution is selected from the group consisting of

mixture comprising the compound of Formula 2 as a surfactant wherein R is nonyl; x, y and z are 1, respectively; and n is 7, methanol as an alcohol and water as a solvent;

mixture comprising the compound of Formula 2 as a surfactant wherein R is octyl; x, y and z are 1, respectively; and n is 7, methanol as an alcohol and water as a solvent;

mixture comprising the compound of Formula 2 as a surfactant wherein R is dodecyl; x, y and z are 0, respectively; and n is 7, isopropanol as an alcohol and water as a solvent;

mixture comprising the compound of Formula 2 as a surfactant wherein R is octyl phenyl; x, y and z are 1, respectively; and n is 3, isopropanol as an alcohol and water as a solvent;

mixture comprising the compound of Formula 3 as a surfactant wherein R is nonyl; x, y and z are 1, respectively; and n is 7, methanol as an alcohol and water as a solvent;

mixture comprising the compound of Formula 3 as a surfactant wherein R is octyl; x, y and z are 1, respectively; and n is 7, methanol as an alcohol and water as a solvent;

mixture comprising the compound of Formula 3 as a surfactant wherein R is dodecyl; x, y and z are 0, respectively; and n is 7, isopropanol as an alcohol and water as a solvent; and

mixture comprising the compound of Formula 3 as a surfactant wherein R is octyl phenyl; x, y and z are 1, respectively; and n is 3, isopropanol as an alcohol and water as a solvent.

16. (Original) The cleaning solution according to claim 15, wherein the surfactant of Formula 2 is present in an amount ranging from 0.001 to 2 wt% based on the total weight of said mixture, and the alcohol is present in an amount ranging from 0 to 20 wt% based on the total weight of said mixture.

17. (Original) The cleaning solution according to claim 15, wherein the surfactant of Formula 3 is present in an amount ranging from 0.001 to 2 wt% based on the total weight of said mixture, and the alcohol is present in an amount ranging from 0 to 10 wt% based on the total weight of said mixture.

18. (Original) The cleaning solution according to claim 16, wherein the surfactant of Formula 2 is present in an amount ranging from 0.01 to 1 wt% based on the total weight of said mixture, and the alcohol is present in an amount ranging from 0.01 to 10 wt% based on

the total weight of said mixture.

19. (Original) The cleaning solution according to claim **17**, wherein the surfactant of Formula 3 is present in an amount ranging from 0.001 to 1 wt% based on the total weight of said mixture, and the alcohol is present in an amount ranging from 0.001 to 5 wt% based on the total weight of said mixture.

20. (Withdrawn) A method for forming a photoresist pattern, comprising:

- (a) preparing a semiconductor substrate on which an underlying layer is formed;
- (b) coating a photoresist on the underlying layer to form a photoresist film;
- (c) exposing the photoresist film to light;
- (d) developing the exposed photoresist film; and
- (e) cleaning the resulting structure using the cleaning solution of claim 1.

21. (Withdrawn) The method according to claim **20**, further comprising soft baking step before part (c) or post baking step after part (c).

22. (Withdrawn) The method according to claim **20**, wherein the source of the light is selected from the group consisting of KrF (248 nm), ArF (193 nm), VUV (157 nm), EUV (13 nm), E-beam, X-ray and ion-beam.

23. (Withdrawn) A semiconductor device manufactured by the method of claim **20**.